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ABSTRACT

Intended to help teachers define critical thinking/reading and to unfold opportunities and strategies for critical reading, this monograph discusses some of the practical issues that teachers face and summarizes some of the philosophical and psychological questions related to the teaching of critical thinking. Sections of the monograph include: (1) Critical Thinking and Reading; (2) The Social Process of Critical Thinking; (3) Research on the Effects of Cooperative Learning; (4) Promoting Critical Thinking in the Classroom; and (5) Changing Philosophies about Critical Thinking. (Three figures are included; a 32-item bibliography is attached.) (RS)

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a commitment to critical thinking

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Critical Thinking and Reading

Some people think that if you read, you are thinking critically. They feel that the process of comprehending is so complex that higher level thinking has to take place or there is no comprehension. Reading and critical thinking are indistinguishable, according to this point of view.

At the same time that some academics equate critical thinking with all reading, American employers are complaining that they can no longer find employees who think critically. Even those who can read, they say, do not have the training to solve problems and to evaluate alternatives. Since these contradictory definitions are made on the same planet in the same year, it seems clear that the term *critical thinking* has diverse meanings. It might be more accurate to say that there are diverse philosophies at work in those different uses of the term *critical thinking*.

When managers of large U.S. firms bemoan the lack of critical thinking in today's labor pool, and when they point an accusing finger at the schools for not providing appropriate training, they obviously believe that critical thinking is a skill that can be developed and measured in school. They have assessed the skills of their workers and found them lacking. Some current theorists believe that reading and thinking are part of a whole cloth that cannot be cut into pieces, some labeled literal thinking, some labeled critical thinking. Reading is reading; thinking is thinking, they say. The only thing that may set critical thinking apart from other thinking is an attitude of skepticism. (Harste, 1989; Siegal and Carey, 1989)

Where does this leave the classroom teacher? Does the teacher have a responsibility to develop critical thinking? It would certainly seem so because almost every school curriculum lists critical thinking and critical reading as a major performance goal. Curriculum committees, therefore, have decided that critical reading should be taught and measured. Thus most reading tests have a category called critical reading. They assume, then, that the teacher can develop and can demonstrate progress in critical reading as part of a public record.

As can be inferred from the above, the definition of critical thinking, its development in the classroom, and its assessment

raise knotty issues for schools and teachers. This monograph discusses some of the practical issues that teachers face and summarizes some of the philosophical and psychological questions related to the teaching of critical thinking. Our primary concern here is to help teachers define critical thinking/reading and to unfold opportunities and strategies for critical reading. Teachers can then decide how to engage their students in the daily exercise of critical reading. First, however, teachers will have to choose their own definition of critical thinking and then make a commitment to implement it in the classroom.

Critical is Not Negative

Once I asked a student to give his critical reaction to an article the class had read, and he said: "I don't want to criticize it. I like it." His response reflects a fairly common sense notion that critical thinking means badmouthing the ideas or the writing. As a matter of fact, he had already begun a critical response when he said he liked the piece. By adding his reasons for that positive impression, he would have given his classmates an example of critical thinking. He had decided that the article had some value for him—either a valuable concept or a pleasing manner of expression.

Even those who want to make critical thinking almost indistinguishable from other thinking define critical thinking in words that carry a negative connotation. They refer to critical thinking as representing a skeptical attitude or a cynical curiosity—terms that suggest a search for fraud, lies, and other false representations of the world. (Siegal and Carey, 1989) Perhaps a more appropriate question to ask is: "Does this match my sense of reality?" That question allows both positive and negative reactions. It still allows the reader to search the text with curiosity without predetermining that the response will be negative.

The disposition to raise questions seems to be part of everyone's definition of critical thinking. Whether or not the questions reflect a general curiosity or a cynical curiosity, all theorists see the need for the mind to challenge ideas regularly and to examine their match with the reality of the reader. Norris (1985) pushes the idea further by saying that the reader also

must have the disposition to be productive, that is, to give an overt response to the questions that the reader raises about the text. In the most general sense, then, teachers promote critical reading when they encourage students to raise questions about their reading and to answer their own questions. The most general questions being: "Is this text valuable for me?" "Does it match my sense of the world?" By regularly asking students to respond to questions like that the teacher promotes an attitude or a disposition to think critically.

More Precise Definitions

If we are thinking critically about this discussion, we have to ask ourselves whether or not the broad notion of critical thinking as employing a curious attitude works for us. Does it give us enough direction to guide our students? Will we know when our students are making progress? If they seem confused by the general question: "Is this valuable?" will we have enough guidance to help them get off dead center? Can we turn that curious attitude into a public record to show students and parents that we are responsible agents of the community and are teaching or promoting critical thinking?

There are many ways to add more precision to our definition if we so desire. Each step towards precision makes it easier for us to assess progress, but carries the corresponding danger that we will focus only on highly specific behaviors and cut off the flexibility of broad curiosity about truth. Teachers need to decide what level of specificity works for them and their students.

One step towards a more manageable definition is to bring student thinking to a decision point. They have to decide what to do or what to believe. (Norris, 1985) To make those decisions, readers have to weigh alternatives and apply some standards to arrive at their decisions. For example among the five books on the theme of courage, which one appears to deliver the action and the sense of history that I want for this project? Perhaps a teacher may not want to examine the alternatives in public, but the very fact that a decision was made forces the mind to evaluate by some process, however vague, the importance of the ideas or events in the article.

Even though the terminology and skills involved in reading critically may be somewhat elusive, the development of critical readers has come to be an undeniably important goal of the school curriculum. The rapidly increasing volume of printed material to be read, assimilated, and evaluated, plus the constant propaganda that pounds our senses, makes the ability to read critically a workaday tool and weapon. We use the term propaganda to mean one-sided advocacy of a particular idea or belief. From morning newspaper editorials to the commercials we watch on evening television, each day forces us to read and react critically to the obvious and to the obscure.

For example, readers will recognize the different approaches to a school tax hike taken by the chamber of commerce and the local teachers' association; they will note inconsistencies between the headline and text in a movie magazine; they will question the advertisement that promises a bright future for the user of a certain toothpaste or cleansing cream. It is imperative that informed consumers and citizens read with care and that teachers are alert to daily opportunities to apply critical reading skills. The teacher must work toward situations that give pupils a chance to consider purposes for reading other than simple recall. Students then learn to analyze, to draw inferences, and to make judgments on the basis of some standards.

What is Critical Reading?

A Philosophy of Critical Reading

In this day when teachers are exercising more and more control over the curriculum in their classrooms, they are faced with the problem of defining terms rather than simply carrying out directions. Unless teachers merely replace the directions in a textbook with directions coming from an educational guru, they have to define what they mean by critical reading and develop a set of beliefs or develop a philosophy about how best to conduct critical reading/thinking in their classrooms. Simply asking higher level questions now and then or setting up cooperative groups now and then will not develop critical thinking. If critical thinking is important, teachers have to make a commitment to promoting critical thinking on a continuing basis.

The first step in making a commitment to critical thinking is to establish a definition that is manageable. One of the reasons the Norris definition is attractive for teachers is that it is direct and seems quite manageable—*critical thinking is deciding rationally what to do or what to believe.*

In classroom discussion, therefore, that definition enables the teacher to lead children to the point where they will decide:

- What would you do in that situation?
- What will you do with that information in your life?
- Do you believe the value that was presented in that story?
- What does this information do to your belief system?

A simple definition of course does not by itself create an atmosphere of critical reading. In the Norris definition there is the nagging word "rationally." Alternatives have to be weighed, standards or criteria need to be applied, then a judgment can be made that indicates the action or belief that the reader will adopt.

Norris also suggests that critical thinking will occur in the classroom only when there is a commitment to reach below the surface and then to be productive with your decision. What is implied is that both personal reflection and some kind of public display are part of critical thinking. Once again we return to the interaction between private work and community work. In private we reflect and make one set of decisions, but what sharpens our critical skills is the sharing of them with others. It is probably in this sense that proponents of cooperative learning claim that critical thinking is central to the group process. It is in the fire of group discussion that the mettle of our ideas are refined and hardened.

Robinson (1964) states that critical reading is the ability to apply relevant criteria in evaluating a selection. It is the judgment of the "veracity, validity, and worth of what is read, based on criteria or standards developed through previous experience."

Russell (1956) suggests four conditions essential for critical reading:

1. a knowledge of the field in which the reading is being done
2. an attitude of questioning and suspended judgment
3. some application of the methods of logical analysis or scientific inquiry
4. taking action in light of the analysis or reasoning

Children who can underline key words and phrases in a selection, who can strike out irrelevant sentences in a presentation, or who can select appropriate titles for stories are all involved in analysis. Skill in analytical interpretation requires practice guided by the teacher and practical illustrations.

Neither teachers nor their students will meet all these conditions at all times. Neither adults nor children can possibly be armed with background knowledge in every field in which they must read. Today's world is too big and human knowledge is too vast. It is necessary, therefore, to equip students with an attitude of general awareness so that they can detect unsupported statements, sweeping generalizations, and conclusions that have been drawn haphazardly. An attitude of suspended judgment may not always be possible. Earlier biases and prejudices affect one's ability to read critically at a later period, as do such factors as age, sex, home background, and sociopolitical attitudes.

As part of his training a student should be taught to recognize his biases and deal with them as a factor in the way he reacts to the printed or spoken word.

The teacher fosters an attitude of inquiry when he teaches the techniques of critical reading. Against such a background children will develop high standards for judging what they read.

One task of the critical reader is to interpret the writer's message, a process sometimes described as "reading between the lines." This interpretation involves an attempt on the part of

the reader to understand the logical unity of presentation from the printed material. At this point the reader begins to manipulate the author's ideas mentally in order to perceive relationships and visualize the structure of the selection. The reader asks: "What is the author's main thesis?" "How are the main points supported by detail?" "How do major points within the selection relate?" "Has significant information been overlooked?" The process involves the reader in forming a mental outline, weighing points for their relation and strength, among other things.

Inference

Inference is an attempt on the part of the reader to understand what the author has left unsaid or what he attempts to say without words. An interpolating process, it involves deductive leaps from what is literally stated to what is actually intended: "This is what the author has said, but what does he actually mean?" An example of this type of reading is found in Marc Anthony's funeral oration in Shakespeare's *Julius Caesar*. Marc Anthony continually repeats the phrase: "But Brutus is an honorable man," while he implies the opposite—an effective strategy.

Inferential interpretations depend on a reader's background and intuition. The reader must put several clues together in order to predict possible occurrences or behaviors. He must become adept at using context as a sounding board against which inferences can be tested. And he may need more information about the author: Is the author a satirist? Does he try to manipulate his reader? The reader is involved in bridging the gaps in an author's presentation; he gathers clues as a springboard and then makes the inferential leap. Children make inferences daily by watching faces, tone of voice, and body language. When a reading lesson begins with the teacher telling everyone to hurry and sit still while she has a pinched intense look on her face, children know that this may not be a relaxed encounter. As teachers we can encourage children to look for similar clues in print and to interpret them accordingly.

Evaluation

How valuable are the ideas we read? The reader is called upon to make judgments as to the worth of the message. Evaluation depends upon the reader's ability to appraise the truthfulness, validity, and accuracy of the material especially as it affects his own life. The first step in evaluation is a reality check--"Does this match what I know or believe?" The reader may also attempt to determine the accuracy of presentation, the author's professional competence, and the relevancy of his thoughts.

Students who are asked to make judgments may need the aid of *external criteria*, or other references and sources. A pupil with no previous experience with a subject should suspend judgment until he can establish a frame of reference through the use of valid outside sources. *Internal standards* may be all that are required by the student with a strong basis of experience in the area. Difficulty may occur when a pupil's internal criteria, the product of his culture, are strongly in conflict with the prevailing outside sources. Because of an emotional reaction the reader may not be able to suspend judgment until a good deal of evidence is presented on a subject. For example, a Quaker reading a plea to expand the offensive power of the military is influenced by his beliefs to reject this argument regardless of its logic or rhetoric.

The teacher aids the student in clarifying the assumptions he brings to the reading task, in analyzing and ascertaining the assumptions of the author, and in broadening the informational background out of which more unbiased standards of judgment may come. Through discussions, through questions and through thinking aloud, the teacher helps the student appreciate what critical thinking looks like in action.

Judging the worth of a poem or prose selection is another aspect of what is labeled critical reading. We often call this literary appreciation because it is treated in courses on literary criticism. It is actually a kind of critical reading, using criteria arising from the literary form and from the nature of the experience being described. Literary criticism is quite different from the reader response theory currently advocated as a means for

making text more meaningful to the reader. This theory assumes that the reader is stimulated by the text but creates his own meaning as he continues to respond to the ideas in the text. In this sense the reader is not evaluating the author's text but is building a meaningful text in his own image. What happens in the mind of the reader, therefore, is the important event, not the external text. (Rosenblatt, 1976)

The Art of Questioning

When a teacher asks questions to determine a child's grasp of content, he not only gives the student a type of problem but also leads him to ask questions of his own.

Consider the following selection from a children's book. Formulate three questions a teacher might ask a second-grade child concerning this story:

> Susan and Billy watched Billy's new airplane sail through the air.
> "Look at it go, Susan!" Billy called. "It's as fast as lightning."
> "Let me fly the airplane," begged Susan.
> "No, you're too little," answered her brother.
> "Please?" Susan asked again.
>
> Billy handed the airplane to his sister. "Be careful," he warned. Susan raced across the yard. Gaining speed, she threw the plane into the air. It made a sudden turn and dropped to the ground in a nose dive. One of the bright red wings lay beside the plane.

Proposed questions:

1.
2.
3.

If a teacher asked questions such as: "What did Billy say when Susan asked to fly his plane?" or "What color was Billy's airplane?" he asks for a restatement of fact. If he asks questions such as: "How do you think Billy feels toward his sister now?" or "What do you expect Billy to do now? What makes you think so?" he asks for an interpretation.

Tapping critical judgment would require questions such as: "Would it have been better had Billy never shared his toy?" or "Could a toy plane fly as fast as lightning?" Questioning can also lead the child to see the application of the story in his own life: "Have you ever had to share with younger brothers and sisters?" "How would you feel about losing a wing from your plane?" Critical thinking does not happen automatically. Using questions can lead pupils to become better readers by giving them an inquiring attitude or by giving them examples of ways to think that may make their reading more interesting and more fruitful.

Questions for Restatement

As discussed earlier questions asking for restatement of information serve as checks to determine whether concepts are grasped firmly. Such questions are the easiest to formulate. Often they are looked upon as the first step in a series of questions—necessary, but not nearly as deep as children need to have for a rich experience in reading. They are often questions of:

- detail ("Who planted the flowers in the garden?")
- sequence ("What happened after the rain?")
- main idea ("What was the story about?")

Questions for Analysis

Questions for analysis require readers to extend what is actually stated. They must use both subtle and obvious author cues to move beyond the literal presentation. This is a gap-filling process. Interpretations can be checked against what is actually stated:

- In what season of the year might this story have taken place? What makes you think so?
- Why do you suppose these Plains Indians made their homes from buffalo hides rather than from bark or logs?
- Why was Mother eager for the rain to stop?
- How did the author really feel about animals? How could you tell?
- What is the organizational plan of the chapter?

The answers to these questions depend upon reader analysis and inference.

Questions for Evaluation

Children are usually hesitant to question the printed word. They may view the author as an authority figure. Teachers who adhere to one textbook as the ultimate source of knowledge reinforce such an attitude; so do teachers who attempt to avoid controversial issues and debate in their classrooms. A realistic attitude can be fostered through questions that ask children to distinguish fact from opinion, to recognize assumptions, and to judge author competence, for example.

Questions that demand critical judgment from the reader while using internal or external criteria force critical reading. "Was Billy's reaction the best one under the circumstances? Why, or why not?" "How does this author know so much about forest rangers?"

Encouraging Critical Thinking Through Questioning

Questions in the classroom are the mainstay of teachers. A number of studies have shown that children's comprehension improves when their teachers are taught to use an organized pattern of questions. (Falkhoff and Moss, 1984) But maybe we are training the wrong people.

If the primary agent in improved comprehension is an active learner, perhaps we would see greater growth by training the children to ask their own questions instead of having them wait for the teacher to come up with questions. From what we know about the value of participatory learning, we should spend more time in getting the learner to raise his or her own questions. That process not only will direct the reader's attention but will also act as a means of tying various ideas together.

After reading an article or a chapter, children should be able to do more than simply summarize what they have read; even though that's an excellent start. After that the student should see if he can ask himself critical thinking questions, for

example: "Why do characters act the way they do?" "Are there cause and effect relations that I can explain?" "Is this message valuable enough to recommend it to someone else?" Then he can decide whether he liked the article or not and try to connect its ideas with other articles or other books that he knows.

With examples from the teacher applied to a specific story, the students could then try to generate their own questions for other stories and use the same categories. The following categories may serve most groups:

- Questions that *seek information* that is given in the text.
- Questions that call for a *summary* or for a statement of the overall theme.
- Questions that search for *relationship*—ranging from time relationships to causal relationships.
- Questions that ask for *evaluations*, such as comparisons of the present text with another one that has some similarities.
- Questions that ask *"What if. . ."* and thus challenge the learner to extend beyond the confines of the text as it appears.

Indeed the very process of asking questions that fit these patterns would help students become critical readers, self-stimulated.

The Teacher as a Critical Reader

The teacher serves as an example as well as a director of learning. In the teacher, children expect a mature reader who can guide them towards becoming critical readers. A mature reader should be prepared to detect devices designed to influence a less perceptive reader. What kinds of questions might arise from this passage:

> You know that I was born and raised in Austria. Do you know that there are no remedial reading cases in Austrian schools? Do you know that there are no remedial cases in Germany, in France, in Italy, in Norway, in Spain—practically anywhere in the world except in the United States? Do you know that there was no such thing as remedial reading in this country either until about thirty

years ago? Do you know that the teaching of reading never was a problem anywhere in the world until the United States switched to the present method around about 1925? This sounds incredible, but it is true. (Flesch, 1955)

A competent reader might ask: "How is a remedial reader being defined by this author?" "Does the author refer to remedial cases or classes designed to handle such readers?" (Refer to sentence five in the passage.) "What is the cause against which the author is building his case—his purpose for writing?" "What is his professional field of interest, his specialization?" "Where are the supporting facts for his generalizations?"

Although a reader may have no immediate knowledge with which to substantiate or refute this author's statements, the reader could detect some sweeping generalizations and a rather hastily drawn conclusion. Note the last statement: "This sounds incredible, but it is true." The author appears to have foreseen disbelief on the part of his readers and uses rhetoric to validate the argument—"but it is true." The mature reader knows that something is not necessarily true just because someone says it is. Children can be led to a similar type of intelligent inquiry by teachers who are critical readers themselves and who ask questions which encourage evaluation. (Meehan, 1970)

Classroom Exercises in Critical Reading

Reality versus Fantasy

In the primary grades one of the first critical reading skills the teacher attempts to develop in students is the ability to distinguish reality from fantasy. She is careful neither to discount fantasy nor to dismiss a story as unworthy because it is fanciful. The teacher realizes that tales of fantasy can spark children's imaginations and elicit creative thought. Even first-grade children, however, can learn to distinguish the difference. They become aware of fantasy signals such as "once-upon-a-time" beginnings and of stories incorporating such traditional fantasy motifs as the beautiful princess, the aged king, the triumph of the younger brother or sister, and reliance upon magic powers and objects.

To initiate awareness the teacher may wish to start with isolated statements and have children respond with a "yes" or "no" depending upon previously established criteria as to the truth or falsity of the statements:

- The moon is made of green cheese.
- A dog can fly.
- Apples grow on cherry trees.
- A kitten is smaller than me.
- A boy can run.

By indicating agreement or disagreement the children grow aware of printed statements that do not match reality. Later, they can discuss the fantasy elements within stories with a "could this have happened?" approach.

- Could the prince really have climbed up on Rapunzel's hair? Why, or why not?
- Could a boy be as small as Tom Thumb?
- Could the cabbage leaves actually have grown as large as a barn? How do you know?

Very young children can also detect the difference between fantasy events and those that are plausible or might have happened. Children can be directed to listen to two accounts of an event, one of which is more true to life than the other. Discussion as to which really could have happened can then be encouraged.

> The puppy shivered from the cold. No one seemed to notice him on the sidewalk as last-minute shoppers hurried home with arms full of Christmas packages. He huddled against a tall building to avoid being stepped on.
>
> Oliver Puppy shivered from the cold. "O dear," he sighed, "don't any of those people want a puppy to take home? I do *so* want a people." Just then he had an idea. "I'll ask one of them to belong to *me*!"

Children enjoy changing a factual presentation to one of fantasy by incorporating talking animals or magic events or other fantasy elements. As children get older it becomes easier

for them to identify specific incidents in fiction that make the story depart from realism. They can also work successfully with tall tales and the writing of humorists to differentiate reality from fantasy when fantasy is presented as truth.

Connotative Power of Words

Awareness of the power of words is a crucial factor in reading critically. Words can comfort, coax, convince, and deceive. A first step toward intelligent and profitable reading results from the reader's ability to scrutinize a passage to determine what reaction the author is attempting to elicit through the use of words that appeal to the emotions, arouse sentiments, evoke sensory images, or incite to action. A competent reader can differentiate between the dictionary definition of a word—its denotation—and the images and implications the word suggests—its connotation.

Consider, for example, your reaction to the word *child*. Apart from the rather stark denotative definition, "offspring," the connotative implication calls to mind either the sum total of your experiences with children or isolated singular responses—perhaps your childhood memories, the children you teach, the dimpled baby across the street, or the freckled Little Leaguer in your family. Your reaction to the word may be positive and pleasant. On the other hand, words such as *death, disease, poverty,* and *hell* usually evoke an opposite reaction. These are often called loaded words because, whether you react positively or negatively, the author has intended to trigger a stereotyped response within you. Not all words have connotative power, but those that do can wield a tremendous influence on our lives. Becoming aware of the power of connotative language makes for more critical readers of printed words.

The advertiser is aware of connotations as he markets his product, appealing to the vanity, desires, and weaknesses of the public. Editorials that take a decisive stand on a controversial issue are rich with loaded words, which may either flatter the reader, by appealing to his highest virtues, or awaken fear and distrust for an issue that is new or different. Appeals from worthwhile charities make full use of connotative language for

good causes. Election times provide an abundance of campaign material which carry loaded words that seek to win public approval for a cause or a candidate. In descriptive writing words that appeal to the senses, evoke mental images, and provide literary effectiveness and vividness are used extensively.

Primary Activities

Children who can recognize evocative language are better equipped to make rational judgments about what they are reading and to read critically. Exercises in the primary grades can deal with identification of words with strong imagery. A teacher guides the children to spot such imagery through specific direction:

- Find the words that make you able to almost feel the kitten: (*fuzzy, warm, rough, wet tongue*).
- Find words that give clues to how Mrs. Hill's farm may have smelled: (*fresh cut hay, newly painted fence*).

Similarly, children can find examples of words that appeal to sight, sound, and taste. Many words appeal to more than a single sense. Children with limited experiences develop fewer connotations. Those that develop first center around sensory impressions.

The teacher looks for opportunities to build upon a child's storehouse of personal connotations: "Tell me what comes to mind when I say a word." "Describe what you see or think about." (Use words very close to the child such as *home, mother, love,* and so on.)

Intermediate Activities

It is not the teacher's purpose to encourage students to scrupulously examine each word in a selection. Literary words are usually better appreciated as a gestalt—the impact of the sum of the parts. Newspapers, ads, and political speeches, however, provide excellent opportunities for working with connotative language in the intermediate grades.

For example, have children underline the loaded words in a political speech such as this one:

> Long have I been a citizen of our beloved community. I have watched my children grow here. But now I am deeply disturbed. Never have I witnessed a more tragic upheaval than our city has suffered under my opponent Major Davis. Taxes have skyrocketed, yet children lie awake at night too hungry to sleep. Our once fair city streets are littered and gutted. Graft and corruption have encamped at City Hall. But, my friends, there is hope. Beckoning us is a bright new horizon, involving us all as free Americans who want desperately to stop decay and begin anew. With a dependable team we can aim toward a better tomorrow. Continuing down the same path can lead only to certain civic death.

- Lead children to note generalities, words with fuzzy meanings, and the ways in which words can be used to skirt issues and to embellish empty statements.
- Discuss connotative words in advertising.
- Find words an advertisement includes in order to appeal to the senses:

"Hair that shines like the sun . . . soft and perfect all the time." (*shampoo*)
"With all the sassy flavor, tender garlic, and mild sweet peppers . . . oozing with twenty-three herbs and spices." (*salad dressing*)
"Seeks out and eliminates cooking odor, musty odors, all kinds of household orders—leaves a fresh clean scent, but never a telltale odor of its own." (*air freshener*)

- Discuss some words that advertisers avoid. See if you can determine why some words are chosen rather than others. (For example, "scent" rather than "smell.")
- Try to determine why a particular brand name was selected for a product. (Joy, Thrill, Halo.)
- Find titles of books that have connotative power.
- Think of words that have recently gained a second connotation. ("Protest," "bohemian.") Which of these words has a general connotation (eliciting similar responses in the total populace) as opposed to a personal connotation?
- Write advertisements or editorials incorporating as many loaded words and words with strong imagery as possible.

Facts versus Opinion

Often it becomes the reader's purpose to distinguish statements of fact from statements of opinion. Factual statements are objective and can be verified; that is, measured in some objective fashion. The truth of the statement: "Johnny is seven feet tall" can be determined by any number of observers using a measuring tape. "Johnny is extremely tall" is not verifiable but rests on one's interpretation of the words *tall* or *extremely*, which may or may not coincide with another's viewpoint.

Consider the difference in presentation of facts and opinion in these examples:

- The temperature and rainfall in the equatorial zone make living there an unpleasant experience.
- Alabama was admitted to the Union in 1819.

Perhaps proof of these statements does not lie within our personal experience. It is not difficult to ascertain, however, that the truth or falsity of the second statement may be checked with a reliable encyclopedia. The first statement depends upon personal background, tastes, and temperament. Certainly some native of the area may consider it to be wrong.

This is not to suggest that we cannot air an opinion unless facts are obtainable. Opinions are an important part of life. We depend upon the commentaries of experts and their opinions, which are based upon facts. We expect a senator to interpret economic developments, for example. We expect an editor to editorialize. The mature reader attempts to maintain critical awareness of the issues so that his opinions can be weighed in relation to the opinions of others.

At times, however, facts are a necessity. We demand facts about daily occurrences in straight news reporting, for instance. We demand this same kind of factual presentation from textbooks.

Distinguishing fact from opinion is not always easy—especially when one's experience or background in a subject is weak. Then the reader must make use of outside criteria. When

an author is giving an opinion, he often sends out opinion signals. Children can be made aware of these, just as they can be made aware of fantasy signals. Opinion signals include: "it seems to me," "although not necessarily proven," "in my opinion," "as I (we) see it," and so on. These indicate that the author's expert or inexpert opinion follows.

Children in primary grades can work with fact and opinion at a simple level. If the teacher makes sure that children have internalized criteria for assessing the verifiability of *one* statement, he can teach them to watch for an obvious signal in another.

- A dog is an animal.
- I think dogs should be kept outdoors.

At an intermediate level isolated statements of fact and opinion may give way to materials taken directly from the content area. Factual statements may be rewritten as opinions, and vice-versa. The teacher should help children to understand the importance of factual presentations in texts. For example, speculate as to how social studies books would reflect different views if written by strong-minded Republicans, Democrats, segregationists, English people, and so on. The teacher can offer statements such as the following and ask students to indicate which are facts (verifiable) and which are opinion:

- Asia is the largest continent.
- Asia is the most beautiful continent.
- Thurgood Marshall became the first black to be appointed to the Supreme Court on June 13, 1967.
- Thurgood Marshall deserved the honor of becoming a Supreme Court Justice.

Judging Author Competence

Teaching children to evaluate the printed word can be extended to guarded acceptance of the author's right to speak as an authority on a topic.

A mature reader notes both the source of a publication and the author's background. Knowing something about an author's

professional training and bias makes a reader more or less open to the author's viewpoint.

Children in primary grades can be asked:

- Is this author writing about something or someone he really knows?
- How can we find out? (Lead students to the jacket flaps of books, to reviews, to the school librarian.)
- Where might we look to check some of these facts? (Encyclopedias and other references.)

Resources

Children in intermediate grades can use such references as *Who's Who in America* and *American Men of Science* for biographical data. They can learn to check the card catalogue in the library and the *Reader's Guide to Periodical Literature* in order to determine the scope of an author's work. Children in the middle grades may enjoy writing to publishers to obtain information about an author. They may ask about the depth and breadth of an author's reportage.

Children in the intermediate grades can use sources such as the *Junior Book of Authors* (Kunitz and Haycraft) or sections of the *Horn Book*. The school librarian is an additional resource for reference books.

Practical examples of evaluating author background, education, reputation, and professional position can be profitable for middle-graders. For example, when you read two blurbs about authors of science books you find that the first is head of a science department, director of research studies at a university and has worked as a consultant on several science textbooks. The second is highly interested in science, has read extensively, and is primarily a children's author. Ask the children:

- Which of the two might have more background for writing a book on leaf identification?
- What is the standard for selecting one author over the other?

- Can you determine whether publishing house publicity writers and the copy on book jackets have any reason to distort author expertness in a field?

This may result in evaluating the source of the author's expertise.

Determining Author Purpose

Determining the intent of the author enables the reader to evaluate his message better. Does the author hope to inform, amuse, convince, or arouse? Does he wish to state facts, deprecate, or dispel doubt? The purpose of an author's work often determines where it is published. If he wants to increase the knowledge in a certain field substantially by reporting his research results he may choose a scholarly journal with limited readership. If he wants to appeal to a wide audience he might choose *Reader's Digest*. Similarly, the *Congressional Record* probably carries a more direct account of a Senate bill you are following than the editorial page of your newspaper. The purpose for which each piece is printed is different.

Children can learn to become aware of how author purpose may slant a presentation. For example, Robert Lawson's delightful book *Ben and Me* is a fictionalized account of the scientific achievements of Benjamin Franklin as "told" by a mouse who takes full credit for Franklin's discoveries. It can be compared with the D'Aulaires' book *Benjamin Franklin*, a biography of this famous inventor. Children can be taught to discern differences in presentation because of differences in purpose.

Stories can be assessed for author purpose. A simple classification scheme such as "fun" or "information" may be a good starting point for beginning such work. Newspapers and varied news accounts may make the point for intermediate-grade students. They may also engage in such activities as:

Reading selected paragraphs with readily determined purposes. For example, one paragraph may inform the children about the new school cafeteria—size, cost, seating capacity, and hours it is open. Another may urge students to take care of the cafeteria, reinforcing the rules while appealing to school spirit.

Writing articles with different purposes. Using the same subject matter, have children write a piece with a specific purpose in mind that is different from other children's pieces. The purpose can be to amuse, to inform, to frighten, and so on. Compare the different articles.

Collect different accounts of the same event. Show those which are presented in straight news style as opposed to feature presentations. Determine the slant of the articles, the author purpose, and the way author purpose can be determined in the article.

Propaganda Techniques

In 1937 the Institute of Propaganda Analysis reported seven techniques whereby unwary readers could fall victim to propaganda. Since then, more than in any other area of critical reading, identifying propaganda has been a standard classroom activity. The original 1937 list of techniques has been expanded, interpreted, and repeatedly redefined by its users. Basically, it consisted of:

1. bad names
2. glad names
3. transfer
4. testimonial
5. plain folks
6. stacking the cards
7. band wagon

Bad names is a method by which readers are encouraged to make a negative judgment about someone or something without examining the evidence cautiously. The writer intends to provoke an emotional reaction through the use of words with unpleasant connotations. Avoidance behavior is sought by name-calling: "Relieve irritating itching"; "The situation is a rotten-smelling mess."

Glad names is a method that is also dependent on the connotative appeal of words. In this case the propagandist appeals to our senses, our noblest ambitions, our feelings of love and of

loyalty. "Lovers of justice," "seekers of truth and honor," "dedicated to democracy," and "delicate demure beauty" are examples of the ways glad names are used to arouse a pleasant response and insure acceptance or approval before the reader scrutinizes the evidence.

Transfer is the utilization of long-standing feelings of admiration for something in an attempt to precipitate the same reaction toward a different product or issue. Politicians cite their church affiliations, hoping for the transfer process. Beauty queens smile beside many different products, and the public desires to emulate the beauty who is selling the product.

Testimonial involves an authority or some well-known person who endorses or rejects some product, service, charity, or issue. The propagandist attempts to play upon the name and fame of the individual in order to convince the public to react in the same way this famous person does. Testimonial is similar to transfer; for example: "Janie Jansen, famous screen star, uses Tress, the shampoo for beautiful women."

Plain folks is the title given to the attempt—often by public speakers such as politicians, ministers, and business people—to gain favor and win confidence by imitating the speech patterns, dress, and interests of those whom they seek to impress. "As a boy on the farm, I watched my Daddy struggle."

Stacking the cards is a method of withholding some element of truth. Omission of truth or slanted judgment may make truth appear to be falsehood and vice-versa; for example: "You know that Roosevelt was betraying us because he made secret deals with Communist boss Stalin."

Band wagon is a follow-the-crowd approach. All are urged to join with the masses and to team with a winner; for example: "More doctors use _____ , the number-one selling brand."

A ready source for initial classroom work with propaganda is advertising. Ads are easily obtainable and highly interesting to intermediate-grade pupils. Newspapers and magazines are rich sources of advertisements.

Ability to recognize propaganda is not a sure indicator of the ability to resist it, therefore the teacher strives to give as many concrete examples and applications to actual experiences as possible.

Evaluating the Critical Reader

The child who becomes a critical reader can, in retrospect, judge the veracity, worth, and validity of what he reads. He judges the author's work; he can distinguish reality from fantasy, can determine author purpose and competency, can note instances of evocative language, and can incorporate outside resources in order to check facts. He becomes aware of propaganda and the effect it can have on his life. He can successfully analyze arguments, grouping the points made and evaluating the conclusions. The critical reader makes use of his skill daily in newspaper reading, incidental reading experiences, and in reading for pleasure. He is likely to become a more intelligent voter, citizen, and consumer as a result of his informed skepticism.

The Social Process of Critical Thinking

The activities described in the preceding pages are those that have been used by teachers to lead students to understand the kinds of things that a critical thinker does, that is, gather alternatives, compare, and use some standards to make a decision. If we were to adopt Norris' definition (1985), we would push that decision into the external world. Once an action or a belief has been established, the reader/thinker has to make it public. He has to share it or make it productive in some way. That makes us wonder if the social environment of the classroom makes a difference in the development of critical thinking.

Recently much has been written about learning groups and the advantages of cooperative and collaborative learning. When given a common problem to solve and when assigned specific responsibilities within their group for solving the common problem, children often work through the process and exhibit critical thinking in action. For example, if they have to decide how to change the ending of a story or decide what conclusions could be drawn if some part of the text were changed, or are asked to figure out the values that a character reflected in a story, they explore, argue, and decide among themselves.

This social process of interacting and collaborating to achieve a common purpose has a significant advantage for critical thinking. It forces ideas into a public forum. As is true in most discussions over issues, the cooperative group arrangement supplies alternative points of view and the need to sort out those views. Here the learner cannot be complacent because someone else is there to challenge his perspective. With guidance from the teacher, the students can locate additional information to aid in their decision-making and can realize that a variety of standards may be used to evaluate a point of view. Perhaps something more is needed than to say you heard it on television.

Not all social learning requires critical thinking. When groups get together to help each other to prepare for a test or to identify the important events leading up to the War between the States, their interactions may be more concerned with how to make each member of the team successful, not how to make

some decision about the artistry or cogency of a passage. But even then, the opportunity for making decisions among alternatives and deciding what to believe is enhanced by the interconnections of all these young minds.

It makes it worthwhile, therefore, to look more closely at cooperative learning as a vehicle for critical thinking. Let's examine the definition of cooperative learning, look at the reported effectiveness of cooperative learning groups, and project ways in which cooperative groups can promote critical reading and critical thinking.

What is Shared Learning?

Shared learning is variously known as cooperative learning, collaborative learning, or other small group learning and it is praised by educational theorists for its influence on critical thinking. As far as instructional goals are concerned, all these group arrangements aim at improving critical thinking. Therefore, for our convenience, we shall call them all "cooperative learning."

Cooperative learning groups set up students in teams; team members are responsible for one another's learning as well as their own. Students encourage and help each other master skills and content that are presented. Students convey to one another the idea that learning is important, valuable, and fun. (Slavin, 1987) According to Slavin, cooperative learning is not an instructional method that can be used from time to time; it is an alternative to the traditional mode of instruction.

Johnson and Johnson (1986) define cooperative learning as a generic classroom learning technique which requires students to work and talk together about academic material while learning effective, positive interpersonal skills. In the cooperative classroom, small groups of students (two to six members) can be seen discussing, explaining, and learning together, regular academic subject material. Students also can be seen practicing effective social skill behaviors in their groups: behaviors which are necessary for working effectively with others, for establishing positive friendships with peers, and for maintaining healthy

family relationships. Teachers act as advisors while the groups are working; they are available to help students with the lesson and with social skill behaviors.

Cooperative learning benefits achievement. Johnson and Johnson (1986) report that in cooperative learning situations more students achieve at higher levels, and they retain the information longer. This increased achievement and retention is true for all ability levels: low, middle, and high. Talking about their school work rather than quietly completing worksheets gives students an opportunity to be more actively involved and more responsible for their own learning. It helps them become critical thinkers. According to Johnson and Johnson, cooperative learning has been shown to facilitate:

- the mastery of concepts and principles
- the application of information to other settings
- problem-solving skills
- creativity
- verbal skills
- the ability to take another person's perspective.

All of these characteristics relate to critical thinking.

Not surprisingly, the evidence is mounting to show the favorable effects of cooperative grouping. The sample studies presented here indicate that both teacher and students are active participants in operating cooperative groups. The teacher gives focus and organizes essential material, providing overview schemes, questions for various levels of reading, resource books, assignment of student roles, and so on. As the groups carry out their inquiry, the teacher helps keep them moving, clarifies student roles, and asks thought-provoking questions that reflect her own sense of curiosity about the issue under discussion.

The students each contribute the energy and the inquiry required by his or her role—information gatherer, discussion leader, evaluator, recorder, and so on. Each has a personal report to make and thus produces a description of his work that may be discussed and evaluated as the teacher wishes.

It is easy to understand that a high level of focused energy by the learner is likely to produce favorable results. That energy is sustained by the group dynamics where each member has to keep delivering something to enable the group to be successful. A real sense of community needs to be developed for these groups to function advantageously. If the group's job is to decide what courage means in the life of a third-grader and to write a report or a story that demonstrates their concept of courage, each member has to contribute a fair share according to his role. If one member is slow to bring sample stories for the rest to read, all the others will prod him into action. After all, if he shirks his responsibility, they all suffer. An important value is communicated through this shared responsibility.

Once a learning group is formed, that does not eliminate personal work and private learning. Individual work, personal reflection and repetitive practice remain a consistent part of all learning. That may be particularly true for refining those skills that help a person polish his reading, writing, and computation—expanding vocabulary, using figurative language, becoming a fluent reader, learning to punctuate effectively, calculating results through efficient formulae, etc.

Some objectives may not lend themselves to an effective gain through group interaction. Perhaps that explains why many cooperative learning experiments show significant effects for attitude and social skills but not for knowledge and thinking skills. Many knowledge and thinking procedures in language arts seem to require personal attention and persistent practice for fluency and power. Realizing this, the teacher selects problem-solving type projects for cooperative learning groups and personal assignments for those learnings that rely primarily on the private practice of the individual learner.

Effects on Attitude and Achievement

Wheeler and Ryan (1973) reported a study of the effects of *cooperative* and *competitive* classroom environments on the attitudes and achievement of elementary school students in Social Studies. Eighty-eight fifth- and sixth-graders were randomly assigned to one of three treatments: *cooperative, competitive,* or *control.* The two experimental groups were exposed to the same Social Studies content for 18 days and worked on inquiry-related problems within sub-groups (cooperative) or independently (competitive). The control group did not receive the same instructional content. Two attitudinal measures were given to cooperative and competitive subjects (n = 58) as a post-test. All three treatments were given an achievement post-test.

Procedure

Both the cooperative and competitive groups were exposed to the same content—a unit on *adaptation* developed for this investigation. The unit focuses on the Iban (an ethnic group in Borneo) and the Eskimo of northern Alaska. However, the organizational patterns for instruction differed between the *cooperative* and *competitive* groups. Cooperative subjects were randomly assigned to sub-groups of either five or six members apiece. Each sub-group cooperatively worked together to complete various inquiry-type activities in a workbook created by the investigators. Members of the sub-groups submitting the best workbook (as evaluated by the investigators over each five-lesson period) were awarded a "pop" poster as a reward.

Cooperative Learning Format

Within each cooperative sub-group, individual inquiry tasks were further delineated through a division of labor. For example, in one lesson sub-groups were asked to find evidence from slide pictures to support or not support hypotheses generated in a previous lesson. The slides showed scenes that depicted the Iban way of life. The *coordinator* for each sub-group was to keep his sub-group oriented to the task by asking questions such as "Is there any evidence to support this hypothesis?" "Who can list the evidence to support this hypothesis?" and "Who can list the evidence in this picture?"

The *analyzer's* role (in this cooperative learning sub-group) was to determine if the evidence submitted by sub-group members was relevant to the hypothesis under consideration. Thus, if a sub-group member suggested that a bowl of rice found in one of the slide pictures supported the hypothesis that the Iban were a religious people, the analyzer could then ask: "What does the rice have to do with religion?" or, "Is there any other evidence to be found in the slide pictures to make you think that there is a connection between the rice and religion?"

After the sub-group had arrived at a group decision as to what evidence should be included to support a particular hypothesis, the *recorder's* task (in this cooperative learning sub-group) was to list the evidence in the sub-group's workbook.

Competitive subjects worked on the same inquiry workbooks, but individually, rather than in sub-groups. After each five-lesson period, posters were awarded to the six individuals with the best workbook.

Control subjects studied a unit of Social Studies content different from the content studied by the two experimental groups and did not engage systematically in inquiry activities.

Results of the Study

Results indicated that *cooperative* subjects, significantly more than the *competitive* subjects, liked Social Studies class, sharing

information, working together, talking with one another, and receiving group versus individual grades. However, no significant difference between *cooperative* and *competitive* groups was found on achievement, although both groups were superior to the control group. An analysis of variance was used to analyze the data. Significant F values in favor of *cooperative* over *competitive* were found for main effects due to treatments on all three measures (perception, $F = 244.33$, $df = 1/54$, $p < .0001$; attitude toward social studies instruction, $F = 5.40$, $df = 1/54$, $p < .05$; attitude toward *cooperative* situations; $F = 49.46$, $df = 1/54$, $p < .0001$). Anxiety and interaction effects were non-significant on all three measures.

Four Conditions Studied

In another study Lew, et al. (1986) examined the effects of collaborative learning. The effects of four conditions were investigated: (a) opportunity to interact with classmates, (b) positive goal interdependence, (c) positive goal interdependence with a collaborative-skills group contingency, and (d) positive goal interdependence with both collaborative-skills and academic group contingencies. The dependent variables were achievement, cross-handicap relationships, and voluntary use of collaborative skills. Two populations were studied: (a) eighty-three eighth-grade non-handicapped students and (b) four socially isolated and withdrawn students (two eighth-grade and two eleventh-grade).

Results

The results indicate that positive goal interdependence with both collaborative-skills and academic group contingencies promoted the most positive relationships with non-handicapped classmates, the most frequent engagement in cooperative skills, and the highest achievement.

In sample 1, the achievement results for the three eighth-grade English classes indicate that there were no significant differences among conditions for the tests given during the baseline condition. The baseline condition consisted of assigning vocabulary words on Monday, giving students a non-vocabulary

assignment on Tuesday and giving them the choice of working alone or with up to three classmates to complete the assignment, giving students the choice to work alone or with up to three classmates to review the vocabulary words for 20 minutes on Thursday, and giving them the 15-minute test on Friday. All instructions, feedback, and rewards were presented to individuals. No contingent reinforcement was used other than individual grades recorded in the teacher's grade book. However, an overall ANOVA and post hoc contrasts revealed that after the study was completed, the students in the two *cooperative* learning conditions tended to achieve higher than did the students in the individualistic condition, $F(2,77) = 2.32$, $p < .10$, with no significant differences existing between the two *cooperative* conditions. In the English class within which specific contingencies were implemented, students achieved higher in the positive goal interdependence and group contingency treatments than in the baseline treatment, with the highest achievement coming in the combined academic and social skills group contingencies treatment, $F(5,125) = 3.53$, $p < .01$.

In sample 2, the four targeted students achieved higher in the positive goal interdependence and group contingency treatments than in the baseline treatment, with the highest achievement coming in the combined academic and social skills group contingencies treatment, $F(5,15) = 3.25$, $p < .05$. Also, the amount of time the four targeted students spent *withdrawn* and *isolated* from their classmates decreased with the introduction of a collaborative skills group contingency in the vocabulary study time and dropped even more when an academic group contingency was added, $F(5,15) = 3.51$, $p < .05$.

The targeted students made more task statements during the free-choice study time after a collaborative-skills contingency was introduced in the vocabulary study time, with the highest rates of task participation resulting after the combined social skills and academic group contingencies were introduced, $F(5,15) = 3.27$, $p < .05$. Similar results tended to be found for maintenance statements, $F(5,15) = 2.68$, $p < .10$.

Ericson, et al. (1987) describe three content area reading strategies—Anticipation-Reaction Guides; Text Previews; and Three-level Study Guides—that capitalize on cooperative small group learning and emphasize higher order critical thinking. The need for providing students with more effective strategies for reading and critically commenting on their text assignments led faculty at Sutter Junior High School and English professors at California State University to apply for a California Academic Partnership Program Grant. This school-university partnership in the content areas of English and Social Studies has produced an in-service program based on assumptions integral to content reading. (Ratekin, et al., 1985) The two major assumptions are that (1) teachers need to vary organizational settings and instructional methods and (2) they need to plan activities for developing students' readiness for learning, acquisition of information, and internalization of concepts.

The in-service program introduced content area reading strategies to Social Studies and English teachers in the following format. First, each content reading strategy was demonstrated in Social Studies and English classrooms by the university resource specialists as the classroom teachers observed. After the demonstrations, a seminar was held to discuss the teachers' observations and evaluations. At this time, the teachers and resource specialists noted successful features and possible modifications. Each demonstration was video-taped for the seminars and for later editing and use with other content area teachers.

The Anticipation-Reaction Guide

An anticipation guide is a series of about five teacher-prepared statements related to the topics of a short story, poem, or other selection. Before reading, students agree or disagree with the statements and discuss the reasons for their answers. The statements may also serve as a reaction guide following reading and as topic sentences for a writing assignment. See Figure 1.

The value of the anticipation-reaction guide strategy is based on three premises. First, students need to draw on their back-

Figure 1
An Anticipation-Reaction Guide

Caged

Directions: Read each statement below. If you agree, put a check in the "Before reading" blank. If you do not agree, do not put a check in the blank. Directions for the "Author's ideas" column will be given later.

Before reading		Author's ideas
_____	The creatures in pet stores are happy and contented.	_____
_____	People sometimes commit cruel acts without realizing that they are cruel.	_____
_____	Freedom is more valuable than money.	_____
_____	Unusual behavior sometimes frightens people.	_____
_____	Two people can be a part of the same event yet have totally different understandings of it.	_____

Ericson, et al. (1987) lesson plan to promote critical thinking through cooperative learning in English/Social Studies classes. Based on *Caged*, a short story by Lloyd E. Reeve.

ground knowledge in order to comprehend what they read—they must integrate new information with old. (Rumelhart, 1980) This is precisely what students do in responding to the guide, which as a pre-reading activity encourages students to draw on background knowledge. An anticipation guide reveals something about students' knowledge and beliefs so that teachers can fill in gaps when necessary. In short, the guide helps students link literature with the events of their own lives. Second, comprehension is enhanced when students are interested in a topic. (Baldwin, Peleg-Bruckner, and McClintock, 1985; Belloni and Jongsma, 1978) Third, reading and writing should be integrated. (Boyer, 1983; Stotsky, 1983) Students who write about a selection are often better able to understand it, since they have had to organize their thoughts and are encouraged to think beyond the explicit text.

The Text Preview

The Text Preview is an introduction which provides students with a detailed framework for comprehending a selection. It consists of three sections: one to build interest; a synopsis; and a brief review of characters with definitions of key vocabulary and several questions to guide reading. See Figure 2. The premises for use of the Text Preview are similar to those for the Anticipation-

Figure 2
A Text Preview

Build interest

Many adults read fairy tales to their children. Did any adult ever read fairy tales to you? Which ones do you remember?

Many fairy tales have a princess who falls in love. The young man she falls in love with must often prove himself worthy to her father, the king. Perhaps he must slay a dragon or survive other dangerous experiences. In some fairy tales, the young man even saves the princess from some horrible beast.

Stories like this are not only for children, however. Stories for teenagers and adults may have many similarities with fairy tales. For example, there are many stories in which modern day parents disapprove of the boy their daughter loves, but they change their minds about him when he does something wonderful, and everything ends happily. Can you think of examples from television or the movies which are modern day fairy tales?

Sometimes in a story or television program something happens that you don't expect. Maybe there is a sad ending instead of a happy ending, or the thief turns out to be a king in disguise. Another unexpected ending might involve having the ugly woman turn out to be a beautiful fashion model working under cover for the police. Can you think of other examples?

Synopsis

In *The Lady or the Tiger*, a king has an unusual way of deciding if a man accused of a crime is guilty or innocent. The accused man is forced to walk into an arena and must open one of two doors. Behind one door is a ferocious tiger who immediately tears the man to pieces as punishment for being guilty. Behind the other door is a beautiful woman who immediately marries him as a reward for his innocence. All the people of the kingdom are required to attend this trial.

Review of Characters, Vocabulary, and Guiding Questions

Now it happens that a common man falls in love with the king's daughter. She loves him in return. But the king finds out about their love and the young man's fate is to be decided in the arena. The princess knows which door hides the tiger and will be able to give her lover a signal. But she is very jealous of the beautiful young woman behind the other door.

What signal does she give her lover? You will have to read to find out.

Before you read the story, we want to tell you again the three most important people in it. They are the king, the princess, and the young man.

There are also some words we would like to define:

The king is "semibarbaric" and "authoritarian." "Semibarbaric" means that he is only half civilized. The other half of the king enjoys bloody shows in the arena. "Authoritarian" means that he demands that everything be done his way.

The princess is "fervent" and "imperious." "Fervent" means that she openly shows her feelings. "Imperious" means that she demands her own way, just as her father does.

As you read, be thinking of these questions:

- What signal does the princess give her lover?
- What does the young man find behind the door he opens?
- Why did the princess choose that door?
- If you were writing this story, how would you have ended it?

Based on *The Lady or the Tiger*, by Frank R. Stockton.

Reaction Guides. Essentially, it encourages use of background knowledge, particularly in the initial interest building section. To construct Text Previews, a teacher should first develop an interest building section: several statements and questions which connect the major topics and issues with experiences familiar to students. For the next segment, the teacher writes a synopsis which may describe setting, characters, point of view, tone, key elements of plot (excluding the outcome or resolution), and the theme. In the initial segment, the teacher reviews the main characters, gives definitions of important vocabulary, and poses several questions for guiding students' reading. Previews should be about 400 words long, but the teacher should take into account the ability and age levels of the students. Ericson, et al. (1987) report that students responded to the text preview strategy favorably, saying they were able to understand the story better.

Three-level Guides

Three-level Guides were used to generate discussions on questions and to stimulate students' *critical thinking* during and after reading. See Figure 3. To construct a Three-level Guide, the teacher should analyze a reading selection for major concepts and important details and develop questions that reflect these concepts and details at multiple levels of understanding. Students discuss and defend their answers in small groups and eventually contribute to a large group discussion of each question.

Figure 3
Three-level study guide for chapter 20—
The Gathering Storm

Directions: Using your book, *American Spirit*, answer the following questions.

Key vocabulary

1. Secession = (*state withdrawing*)
2. Compromise = (*reach an agreement*)

Level 1: Right there on the page

1. What problem arose when the U.S. gained the lands of the Mexican Cession?
   (*because slavery was back*)
2. Why was Senator Henry Clay's compromise plan of 1850 not liked by everyone?
   (*because the north was gaining too much power*)
3. Who disliked Clay's plan? Why?
   (*Senator John C. Calhoun of South Carolina because the north was gaining too much power*)
4. Who liked Clay's plan? Why?
   (*Senator Daniel Webster of Massachusetts. He believed the union was in danger*)

Level 2: Think and search

5. Why was Clay's compromise of 1850 called "a compromise"?
   (*because he wrote what he thought the people would agree with*)

Level 3: On your own

6. Is slavery still a problem in the world? (if so, where, what countries?)
   (*Yes, India*)
7. Is racism still a problem in the world? (if so, where, what countries?)
   (*Yes, Lebanon, Saudi Arabia*)
8. What can we, as a people who value human rights, do about racism?
   (*We can negotiate and encourage friendship between the groups*)

One student's responses to the questions are given in italics in parentheses.

Changing Philosophies about Critical Thinking

A modern attempt to define critical thinking for education received its biggest impetus from John Dewey in the 1930's. His concept of school as exploration or inquiry set the stage for continuing attempts to give teachers and students instructional objectives and strategies to achieve higher order thinking skills or critical thinking. Dewey was interested in what is often referred to as process, not product. School is a place where children explore questions that interest them, thus it is the procedure of learning that is important to Dewey, not what is learned. Since most communities and most curriculum theorists believe that identifiable outcomes are also important for American students, most post-Dewey attempts to define critical thinking and critical reading tended to give it a measurable outcome.

Some theorists, as will be seen later, also believe that critical thinking is intimately linked to specific knowledge. In other words, a person has to possess a substantive body of knowledge in a subject before critical thinking strategies or skills can be applied. That theory stands in opposition to the process-first proponents and to those who would teach critical thinking as a separate entity. Most reading programs do not feel threatened by this theoretical conflict between knowledge and procedure because reading textbooks usually spend time building background and a knowledge base as a foundation for teaching and applying critical thinking.

Attempts to define critical reading in the 50's, 60's, and 70's aimed at establishing a behavioral description that contained enough specificity to measure it and to report reliable results. In the 80's some educators began a movement to counteract the emphasis on behavioristic skills. They called for a return to the process approaches of Dewey wherein the schools'/teachers' role is to create an environment for exploring children's interests. The individual child is the center of their attention, not the community objectives. Reading, writing, and discussing are seen as natural phenomena used to search for meaning. Language modes are all part of one whole cloth and should be viewed holistically instead of as parts that contribute to a whole. Students, they say, do not learn to read, but rather they use language

in all its manifestations as a way to explore interesting things, that is, concepts or events that interest individual children.

Interdisciplinary Interests

During the 80's, the discussion of critical thinking has become more and more interdisciplinary, and has attracted more scholarly attention. From both theoretical and practical perspectives, scholars and researchers have made enormous efforts to clarify and define the concept of critical thinking. Such efforts are necessary because definitions shape our decisions and policy making in education.

In an essay on critical thinking, Sternberg (1985) identifies three major traditions which theorize about the nature of critical thinking: the philosophical, the psychological, and the educational. Discussion of critical thinking from these three perspectives has contributed to our understanding of the nature of critical thinking and consequently to the improvement of its instruction.

Philosophical Tradition

According to Sternberg, the philosophers' concern for the nature of human thinking can be traced back to their ancient Greek ancestors, such as Plato and Aristotle. In the twentieth century John Dewey founded the modern critical thinking movement. He saw education as a way of thinking and exploring, not as a routine for gaining specific knowledge. To Dewey the process of learning was central, not the outcome. Recently, educational philosophers, Robert Ennis, Richard Paul, and Mathew Lipman have been preoccupied with the theoretical and logical aspects of human thinking. These philosophers primarily engage in the inquiry and explication of the basic elements contained in critical thinking and how it is different from other thinking. To a great extent, they believe that formal logic systems are essential to human thinking. As a result, the generalizations from this philosophical tradition often refer to universal and basic thinking activities, such as making comparisons and evaluations. The major defect of philosophical theorizing says Sternberg, lies in overestimating the role of formal logic in critical thinking.

Formal logic can only explain how people think under ideal circumstances and does not consider the concrete context in which thinking takes place. Therefore, it is a theory of competence in an ideal situation, a theory in which logical rules and categories dominate the landscape.

A psychological theory of critical thinking, on the other hand, is interested in "characterizing critical thinking as it is performed under the limitations of the person and the environment." (Sternberg, 1985) Many of the studies in the psychological tradition have been conducted by testing "one performance of human subjects in laboratory settings." (Sternberg, 1985) In comparison with the philosophical approach, the psychologists take into consideration the conditions that influence thinking. They are more interested in how well one thinks under specific circumstances, for example, when a teacher must decide how to discipline an errant child. As a consequence, they do not provide a rational model for thinking. Nonetheless, they can explain the variations observed in a model proposed by the philosophers. They can explain why the teacher who is challenged by an obnoxious student disciplines him out of her emotional state rather than making a decision from a list of logical alternatives.

A pedagogical approach to critical thinking is represented by figures like Bloom (1956), Perkins (1981), and Renzulli (1976) who are more directly bound up with the relation between critical thinking and school performance. They are more concerned with the "skills needed by children in the classroom for problem solving, decision making, and concept learning." (Sternberg, 1985) For example, can they identify critical questions? Can they list alternative solutions? Do they have standards to apply to the critical situation? Are they able to compare and contrast alternatives? Can they explain rationally the decision they have made?

Although the scholars from these three approaches contribute to theorizing about the nature of critical thinking, none of them has presented a thorough but practical model to guide teachers. All three traditions have brought with them some shortcomings characteristic of their respective disciplines.

In the philosophical tradition, the emphasis on formal logic leads philosophers to believe that "the rules of logic can tell us how people might think critically under ideal circumstances in which the limitations typically placed on the human information-processing system are not in place." (Sternberg, 1985) The psychological tradition, focusing on a specific performance, is limited by its laboratory and experimental base—on its case-study methodology. Although the educational tradition focuses on learning behavior and classroom teaching, it lacks the "clarity of epistemological status characteristic of the philosophical and psychological theories." (Sternberg, 1985) Thus these three perspectives demonstrate that the study of critical thinking should not be limited to one or two disciplines.

Philosophy Directs Definition

Of the three traditions, the philosophical tradition has probably been the most influential, not only because the concept of critical thinking was originated by philosophers, but also because philosophical clarification is often considered essential to our understanding and interpretation of the world.

Robert Ennis was the first educational philosopher who attempted to define critical thinking for classroom teachers. Since the publication of his paper "The Concept of Critical Thinking" (1962), Ennis is viewed as the major proponent of the logical approach to critical thinking. He defines critical thinking as the "correct assessment of statements." It consists of a set of reasoning skills listed as the "twelve aspects of critical thinking."

1. Grasping the meaning of a statement.
2. Judging whether there is ambiguity in a statement.
3. Judging whether certain statements contradict each other.
4. Judging whether a conclusion follows necessarily.
5. Judging whether a statement is specific enough.
6. Judging whether a statement is actually the application of a certain principle.
7. Judging whether an observation is reliable.
8. Judging whether an inductive conclusion is warranted.
9. Judging whether the problem has been identified.

10. Judging whether something is an assumption.
11. Judging whether a definition is adequate.
12. Judging whether a statement made by an alleged authority is acceptable. (Ennis, 1962)

In addition to these twelve aspects, Ennis listed three dimensions of critical thinking: the logical dimension; the criterial dimension; and the pragmatic dimension.

As pointed out by others (McPeck, 1981; Siegel & Carey, 1989), Ennis' emphasis on logic is reflected in his definition of critical thinking. He emphasizes logic rather than beliefs. But Ennis does not think logic applied abstractly is sufficient. He claimed that specific content knowledge is necessary in order for a person to think critically. As we can see from the twelve aspects, without specific knowledge, most of them cannot be carried out.

McPeck challenges Ennis' definition of critical thinking because he believes it cannot fully demonstrate the true nature of critical thinking. Ennis' approach seems to ignore the fact that in actuality people vary their logic from one situation to another, and different fields of knowledge may require different types of thinking. McPeck maintains that critical thinking is subject specific, that is, the nature of the discipline and detailed knowledge of science makes its critical thinking different from critical thinking in social studies. There is, then, a subject-specific logic that must be used to think critically about that subject.

Discussing the meaning of critical thinking, McPeck generated ten features which can be summarized as follows:

1. Critical thinking is always subject dependent.
2. Critical thinking varies from field to field.
3. Critical thinking does not necessarily entail disagreement or rejection of accepted norms.
4. Critical thinking consists of the disposition and skill to reflect and seek truth in a given domain of knowledge.
5. Critical thinking is more than assessment of statement, it is a complex thought process involving problem solving and active engagement in certain activities.

6. The study of logic is not sufficient for critical thinking.
7. Since critical thinking is knowledge dependent, it is also knowledge limited.
8. The phrase "critical thinking" is both a 'task' and an 'achievement' phrase: does not necessarily imply success.
9. Critical thinking (in addition to the assessment of a statement) may also include the use or rejection of methods, strategies and techniques as examples.
10. Critical thinking is not coextensive with "rationality" but is a dimension of it. (McPeck, 1981)

McPeck's ten features attempt to bring together the logical or philosophical aspects of critical thinking with the cognitive or psychological aspects. He wants to broaden the definition of critical thinking to make it more than an analytic process. He doesn't say that critical thinking cannot be exercised when a person has limited knowledge about a subject, but he implies that limited knowledge limits or prohibits critical thinking.

To take an example from language arts/composition, a person who knows little about form and expository types will not be able to make critical judgments about the appropriateness of the form used in a particular essay. A person who has little or no knowledge about children's literature will have little to offer when comparing a new book to the array of children's books that have withstood the test of time.

The closest McPeck comes to linking his ten features to classroom teaching is his notion that critical thinking is both a task and an achievement concept. If an achievement concept, it would seem that it could be described in performance terms, assessed, and reported. But McPeck's ten features do not include suggestions on how to assess critical thinking—a necessary coordinate of an instructional plan.

Since a knowledge base is a necessary ingredient in McPeck's concept of critical thinking, that puts him at odds with Paul's notion that methodology and strategy may be the focal point in teaching critical thinking.

Dialogical/Dialectical Mental Activities and Critical Thinking

At the heart of Richard Paul's method for critical thinking is what he calls dialogical thinking. Unlike most traditional philosophers, Paul sees dialogical thinking as an important dimension as well as a characteristic of critical thinking. By dialogical, Paul means that more than one frame of reference is contending for attention and settlement. It is the opposite of monological. In other words, dialogical thinking requires people to think with more than one alternative. These alternatives, or different frames of reference, will dialog with one another as the thinking process proceeds. If a reader thinks critically about a character in a story, he needs another character to compare; then a dialog can occur over the merits of character number one.

Closely related with dialogical thinking is dialectical thinking. Sometimes, the two terms are placed together like "dialogical/dialectical" thinking. The term "dialectical" "includes the ability to reflect critically on one's own thinking and the closely related ability to reason sympathetically within frames of reference distinct from, and even opposed to, one's own." (Rudinow & Paul, 1987) Simply put, *critical thinking for Paul is to be reflectively critical with oneself and sympathetically reasonable with others.*

Paul makes a distinction between primary or instinctual and secondary or cultivated thinking. Primary thinking "is spontaneous, egocentric and strongly prone to irrational belief formation." (Paul, 1987) Therefore, the primary nature is instinctual and natural thinking that relies on feelings and beliefs. People acquire this type without any directed efforts or training.

Secondary thinking is characteristic of human goals and culture as a whole. It is acquired only through extensive training and systematic practice. In other words, it is acquired only through education and cultivation. The most obvious manifestation of this secondary thinking is human rationality, that is, an attempt to rise above instincts and feelings (beliefs). It is the goal of education to further the development of secondary thinking, of human rationality.

Dialogical thinking corresponds nicely to the anticipated dynamics in cooperative learning groups. Assuming the group has consolidated into a community of learners, a dialog about alternatives should arise each time a new decision has to be made by the group. Based on McPeck's features statements, however, the student with the most knowledge has the best opportunity to make critical judgments, assuming that person has the productive attitude that Norris claims makes critical thinkers in our classrooms.

Recent Books of Interest

Three books recently co-published by ERIC/RCS and NCTE on critical thinking discuss critical thinking as a process but not as a process related to the achievement or the application of specific strategies or skills. A basic assumption underlying those books equates critical thinking and rationality. Reading and understanding any text, therefore, requires some critical thinking, according to this position, because all extended text contains complexities for the mind that require it to use some of those mental manipulations that we usually call critical thinking skills.

Siegal and Carey (1989) base their theory about critical thinking on the seminal work of Charles Pierce. It is his notion that all thinking is in reality an interpretation of numerous signs that the thinker sees in the world around him. To drive thought beyond mere acceptance of the external meaning of signs, say Siegal and Carey, the thinker must adopt a cynical skepticism, a constant sense of disbelief. Critical thinking lies in the process of being skeptical, not in one or more specific behaviors that might be carved out.

The second book extends the Pierce philosophy into John Dewey, who was influenced by Pierce. (Neilsen, 1989) Dewey applied the notion of exploration and interpretation to an experimental school at the University of Chicago. It was there that he initiated what became known as the Progressive movement in education—progressive referring to its emphasis on individualism and the constant expansion of the individual towards achieving his own interests or goals.

The third book in the series is a personal essay about the expository form called the personal essay. In it Newkirk (1989) argues for a free-form for the personal essay, an openness of construction that will allow the mind to wander where it wants to go rather than trying to follow an artificial pattern taken from a book or from someone else's mind. This concept aligns Newkirk with the psychological definitions of critical thinking, meaning it is quite idiosyncratic. Newkirk believes that the personal essay should not be bound by external rules of logic but should explore the twists and turns that the individual mind takes. That allows the writer to follow his own lead, so to speak, but also allows the thinker to raise questions and to answer them as they occur, unencumbered by irrelevant textbook structures.

These three books have tried to blend philosophical and psychological aspects of critical thinking theory, but they provide no practical model for teachers. Teachers could certainly move from these ideas into classroom applications since all three books are predominantly psychological. They hold that the thinker maintains a skeptical attitude no matter what the content. They are philosophical in the sense that they are not grounded in laboratory studies and so operate from a priori assumptions. They are not rule bound but certainly context related—with special emphasis on the attitude and the status of the thinker.

The Reality of Critical Reading

We wouldn't want to bring this discussion to a close without asking why we are concerned with critical thinking and critical reading. We educators sometimes get so involved in squabbles over methodology that we forget the purpose of our efforts—to provide our students with the knowledge and the intellectual skills to lead happy and productive lives. Clearly, that purpose involves making choices, and choices begin to differentiate our lives.

In order to make choices, students need more than a methodology. They need experience with significant ideas and with contrasting alternatives that affect lives, whether their own or others with whom they can identify. That's where literature, history, science and engineering enter the picture. They provide the knowledge, the events, the challenges of life that make it possible for students to evaluate life and to fit themselves into the picture.

There used to be a television program called "You Were There." It was a series of reenactments of major historical events and the decisions that people of that moment had to make. Those dramas gave viewers the opportunity to think along with principal characters and to see what alternatives they had at critical decision points. The viewers vicariously became a part of a real life instance of critical thinking.

Those dramatized instances from history, from novels, from discoveries in science or from daily human relationships represent school sponsored opportunities for critical thinking. By reading about them and discussing alternative solutions, the teacher gives students safe experiences to practice critical thinking. They can then analyze methods or techniques for solving problems, i.e., thinking critically about the situation. They have to decide what to do or what to believe. That's when students and teachers can understand that history and literature are part of the ongoing stream of life, and they are in it. Being a critical thinker, a good decision maker, helps them swim more confidently in that stream. The job of the teacher is to provide students with a knowledge base and then help them examine it critically.

To the philosopher logical systems seem to be the key to defining and understanding critical thinking. To the psychologist the context in which thinking takes place and the resulting attitude of the thinker are the important aspects. To the teacher the methodology for achieving critical thinking—however it may be observed—usually occupies center stage.

The oft-conflicting points of view described in this book give the classroom teachers leeway in defining and in teaching

critical thinking. They could emphasize and teach the categories of skills that appear in the logical systems of Ennis or Paul. They could encourage the development of an attitude of disbelief for engaging in reflective thinking. They could identify particular behaviors, such as evaluating story form or applying values to a real-life situation, and teach those as specific examples of critical thinking.

Teachers also have the option of acting as model thinkers and then encouraging their students to imitate them, much as apprentices did in the craft guilds. Teachers can ask questions in a manner that stimulates students to challenge their own views and to compare their views with those of their peers. Teachers can follow a logical taxonomy of skills to give their students practice in comparing and contrasting, in establishing criteria, in judging worthiness, and in applying values to their own lives. These and other options are available to the teacher who wants to promote critical thinking and critical reading. The teacher's personality and philosophy will direct the choice.

It is our sense that most teachers are committed to serving the community in which they work. That means that they want to provide students and parents with performance evidence that their students are learning to think and to read critically. At the same time most teachers try to foster individual thought in each student. That means that they encourage students to adopt a broad attitude of inquiry and skepticism. This attitude, however, does not lend itself to easy assessment.

Even though the teaching of specific critical reading performance and the fostering of a broad attitude compete for the teacher's attention, they are not mutually exclusive. They do create, however, the kind of tension that makes the life of a teacher exciting. Those two goals prod the teacher to original thinking in answering the question: "How can I show critical thinking to the public while freeing my students to become academic detectives as they solve various problems?"

(Doesn't it seem appropriate for a book on critical thinking to end with a question?)

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